



Application Guide

VFB Series
VSB Series
VCB Series
WCB Series

Vertical Console
Fan Coils
300-1200 CFM

This application guide includes expanded cooling and heating data as well as typical connection diagrams and standard valve/piping package configurations.

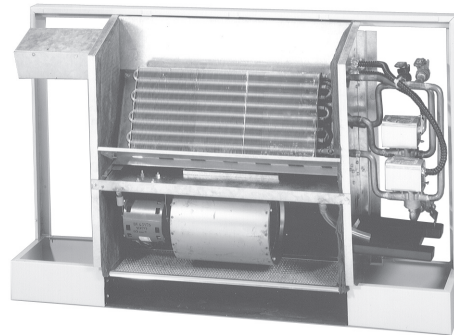
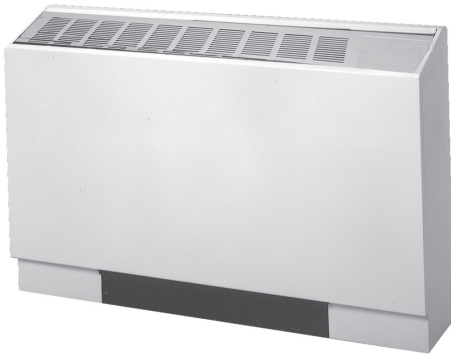


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3 Row Performance Data

| CHILLED WATER COOLING CAPACITY - 3 ROW | | | | | | | | | | | | | | | |
|--|-------------|-----|-----------------|------------------------------|-----------|------------|------------------------------|-----------|------------|------------------------------|-----------|------------|------------------------------|-----------|------------|
| UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | 45°F ENTERING WATER | | | | | | 42°F ENTERING WATER | | | | | |
| | | | | 80°F DB/67°F WB ENTERING AIR | | | 75°F DB/63°F WB ENTERING AIR | | | 80°F DB/67°F WB ENTERING AIR | | | 75°F DB/63°F WB ENTERING AIR | | |
| | | | | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE |
| 3 | 280 (HIGH) | 1.0 | 2.1 | 6.7 | 5.6 | 13.4 | 5.6 | 5.6 | 11.2 | 7.3 | 5.9 | 14.7 | 5.6 | 5.2 | 11.2 |
| | | 2.0 | 6.3 | 8.9 | 6.5 | 9.0 | 6.8 | 5.7 | 6.8 | 9.8 | 6.8 | 9.8 | 7.4 | 5.9 | 7.5 |
| | | 3.0 | 12.0 | 9.8 | 6.8 | 6.5 | 7.5 | 5.9 | 5.0 | 10.7 | 7.1 | 7.1 | 8.2 | 6.2 | 5.5 |
| | 240 (MED) | 1.0 | 2.1 | 6.5 | 5.2 | 13.1 | 5.0 | 4.6 | 10.0 | 7.1 | 5.4 | 14.2 | 5.4 | 4.7 | 10.9 |
| | | 2.0 | 6.3 | 8.3 | 5.9 | 8.3 | 6.4 | 5.1 | 6.4 | 9.1 | 6.1 | 9.1 | 6.9 | 5.3 | 6.9 |
| | | 3.0 | 12.0 | 9.1 | 6.1 | 6.0 | 6.9 | 5.3 | 4.6 | 9.9 | 6.5 | 6.6 | 7.6 | 5.6 | 5.0 |
| 4 | 400 (HIGH) | 1.5 | 3.9 | 10.5 | 8.4 | 14.0 | 9.0 | 7.4 | 10.7 | 11.4 | 8.8 | 15.2 | 8.7 | 7.7 | 11.6 |
| | | 2.2 | 7.9 | 12.3 | 9.0 | 11.1 | 9.4 | 7.9 | 8.5 | 13.4 | 9.5 | 12.1 | 10.2 | 8.3 | 9.3 |
| | | 3.0 | 14.1 | 13.4 | 9.5 | 8.9 | 10.2 | 8.3 | 6.8 | 14.6 | 9.9 | 9.7 | 11.1 | 8.6 | 7.4 |
| | 320 (MED) | 1.5 | 3.9 | 9.8 | 7.3 | 13.1 | 7.5 | 6.4 | 10.0 | 10.7 | 7.7 | 14.3 | 8.2 | 6.7 | 10.9 |
| | | 2.2 | 7.9 | 11.1 | 7.8 | 10.1 | 8.5 | 6.8 | 7.7 | 12.1 | 8.2 | 11.0 | 9.2 | 7.1 | 8.4 |
| | | 3.0 | 14.1 | 12.0 | 8.2 | 8.0 | 9.1 | 7.1 | 6.1 | 13.0 | 8.6 | 8.7 | 10.0 | 7.4 | 6.6 |
| 6 | 600 (HIGH) | 3.0 | 6.5 | 17.0 | 12.9 | 11.4 | 13.0 | 11.4 | 8.7 | 18.6 | 13.5 | 12.4 | 14.2 | 11.9 | 9.5 |
| | | 4.0 | 11.3 | 18.6 | 13.5 | 9.3 | 14.2 | 11.9 | 7.1 | 20.3 | 14.2 | 10.1 | 15.5 | 12.4 | 7.7 |
| | | 5.0 | 17.4 | 19.6 | 13.9 | 7.9 | 15.0 | 12.2 | 6.0 | 21.4 | 14.6 | 8.6 | 16.4 | 12.7 | 6.6 |
| | 430 (MED) | 3.0 | 6.5 | 14.7 | 10.4 | 9.8 | 11.2 | 9.1 | 7.5 | 16.1 | 11.0 | 10.7 | 12.3 | 9.5 | 8.2 |
| | | 4.0 | 11.3 | 15.8 | 10.9 | 7.9 | 12.1 | 9.4 | 6.0 | 17.2 | 11.4 | 8.6 | 13.2 | 9.9 | 6.6 |
| | | 5.0 | 17.4 | 16.5 | 11.1 | 6.6 | 12.6 | 9.7 | 5.1 | 18.0 | 11.7 | 7.2 | 13.8 | 10.1 | 5.5 |
| 8 | 800 (HIGH) | 4.0 | 7.2 | 22.1 | 16.9 | 11.1 | 16.9 | 14.9 | 8.4 | 24.1 | 17.7 | 12.1 | 18.4 | 15.5 | 9.2 |
| | | 5.0 | 10.9 | 23.8 | 17.6 | 9.5 | 18.2 | 15.4 | 7.3 | 26.0 | 18.4 | 10.4 | 19.8 | 16.1 | 7.9 |
| | | 6.0 | 15.3 | 25.1 | 18.0 | 8.4 | 19.1 | 15.8 | 6.4 | 27.3 | 18.9 | 9.1 | 20.8 | 16.5 | 7.0 |
| | 680 (MED) | 4.0 | 7.2 | 20.7 | 15.3 | 10.3 | 15.8 | 13.4 | 7.9 | 22.5 | 16.0 | 11.3 | 17.2 | 13.9 | 8.6 |
| | | 5.0 | 10.9 | 22.0 | 15.8 | 8.8 | 16.8 | 13.8 | 6.7 | 24.0 | 16.5 | 9.6 | 18.3 | 14.4 | 7.3 |
| | | 6.0 | 15.3 | 22.9 | 16.1 | 7.6 | 17.5 | 14.1 | 5.8 | 25.0 | 16.9 | 8.3 | 19.1 | 14.7 | 6.4 |
| 10 | 1000 (HIGH) | 6.0 | 9.0 | 29.7 | 23.2 | 9.9 | 22.7 | 20.5 | 7.6 | 32.4 | 24.2 | 10.8 | 24.7 | 21.3 | 8.2 |
| | | 7.0 | 11.9 | 31.0 | 23.7 | 8.9 | 23.7 | 20.8 | 6.8 | 33.8 | 24.8 | 9.7 | 25.8 | 21.7 | 7.4 |
| | | 8.0 | 15.3 | 32.1 | 24.1 | 8.0 | 24.5 | 21.2 | 6.1 | 34.9 | 25.2 | 8.7 | 26.7 | 22.0 | 6.7 |
| | 880 (MED) | 6.0 | 9.0 | 27.6 | 21.1 | 9.2 | 21.1 | 18.5 | 7.0 | 30.1 | 22.0 | 10.0 | 23.0 | 19.3 | 7.7 |
| | | 7.0 | 11.9 | 28.8 | 21.5 | 8.2 | 22.0 | 18.9 | 6.3 | 31.4 | 22.5 | 9.0 | 24.0 | 19.6 | 6.8 |
| | | 8.0 | 15.3 | 29.7 | 21.9 | 7.4 | 22.7 | 19.2 | 5.7 | 32.4 | 22.9 | 8.1 | 24.8 | 20.0 | 6.2 |
| 12 | 1200 (HIGH) | 6.5 | 10.4 | 34.8 | 27.6 | 10.7 | 26.6 | 24.3 | 8.2 | 38.0 | 28.7 | 11.7 | 29.0 | 25.2 | 8.9 |
| | | 7.5 | 13.6 | 36.3 | 28.1 | 9.7 | 27.8 | 24.7 | 7.4 | 39.6 | 29.3 | 10.6 | 30.2 | 25.7 | 8.1 |
| | | 8.5 | 17.1 | 37.6 | 28.6 | 8.8 | 28.7 | 25.1 | 6.8 | 41.0 | 29.9 | 9.6 | 31.3 | 26.1 | 7.4 |
| | 1030 (MED) | 6.5 | 10.4 | 32.0 | 24.6 | 9.8 | 24.4 | 21.6 | 7.5 | 34.9 | 25.6 | 10.7 | 16.6 | 22.4 | 8.2 |
| | | 7.5 | 13.6 | 33.3 | 25.1 | 8.9 | 25.4 | 22.0 | 6.8 | 36.3 | 26.2 | 9.7 | 17.8 | 22.9 | 7.4 |
| | | 8.5 | 17.1 | 34.4 | 25.5 | 8.1 | 26.3 | 22.3 | 6.2 | 37.5 | 26.6 | 8.8 | 28.7 | 23.2 | 6.7 |

| HOT WATER HEATING CAPACITY - 3 ROW | | | | | | | | | | | | | |
|------------------------------------|------------|-----|-----------------|---|-------|-------|------------------------|-------------|-----|-----------------|---|-------|-------|
| UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE | | | UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE | | |
| | | | | 140°F | 160°F | 180°F | | | | | 140°F | 160°F | 180°F |
| 3 | 280 (HIGH) | 1.5 | 4.0 | 14.8 | 19.0 | 23.3 | 8 | 800 (HIGH) | 4.0 | 7.2 | 40.6 | 52.3 | 63.9 |
| | | 2.5 | 9.0 | 15.7 | 20.2 | 24.7 | | | 5.0 | 10.9 | 41.8 | 53.8 | 65.7 |
| | | 3.5 | 15.3 | 16.2 | 20.7 | 25.4 | | | 6.0 | 15.3 | 42.6 | 54.8 | 67.0 |
| | 240 (MED) | 1.5 | 4.0 | 13.4 | 17.2 | 21.0 | | 680 (MED) | 4.0 | 7.2 | 36.5 | 46.9 | 57.3 |
| | | 2.5 | 9.0 | 14.0 | 18.0 | 22.1 | | | 5.0 | 10.9 | 37.4 | 48.1 | 58.8 |
| | | 3.5 | 15.3 | 14.4 | 18.5 | 22.6 | | | 6.0 | 15.3 | 38.1 | 48.9 | 59.8 |
| 4 | 400 (HIGH) | 1.5 | 3.9 | 20.4 | 26.3 | 32.1 | 10 | 1000 (HIGH) | 5.0 | 6.4 | 54.3 | 69.8 | 85.3 |
| | | 2.5 | 10.0 | 22.0 | 28.3 | 34.6 | | | 6.5 | 10.4 | 56.1 | 72.2 | 88.2 |
| | | 3.5 | 18.7 | 22.8 | 29.3 | 35.8 | | | 8.0 | 15.3 | 57.4 | 73.8 | 90.2 |
| | 320 (MED) | 1.5 | 3.9 | 17.7 | 22.8 | 27.8 | | 880 (MED) | 5.0 | 6.4 | 49.7 | 63.9 | 78.1 |
| | | 2.5 | 10.0 | 18.8 | 24.1 | 29.5 | | | 6.5 | 10.4 | 51.4 | 66.0 | 80.7 |
| | | 3.5 | 18.7 | 19.3 | 24.8 | 30.3 | | | 8.0 | 15.3 | 52.4 | 67.4 | 82.4 |
| 6 | 600 (HIGH) | 3.0 | 6.5 | 31.1 | 39.9 | 48.8 | 12 | 1200 (HIGH) | 5.5 | 7.7 | 64.4 | 82.8 | 101.2 |
| | | 4.0 | 11.3 | 32.2 | 41.4 | 50.6 | | | 7.0 | 12.0 | 66.5 | 85.5 | 104.5 |
| | | 5.0 | 17.4 | 32.9 | 42.3 | 51.7 | | | 8.5 | 17.1 | 67.9 | 87.3 | 106.8 |
| | 430 (MED) | 3.0 | 6.5 | 24.7 | 31.8 | 38.9 | | 1030 (MED) | 5.5 | 7.7 | 58.1 | 74.8 | 91.4 |
| | | 4.0 | 11.3 | 25.4 | 32.6 | 39.9 | | | 7.0 | 12.0 | 59.8 | 76.9 | 94.0 |
| | | 5.0 | 17.4 | 25.8 | 33.2 | 40.6 | | | 8.5 | 17.1 | 61.0 | 78.5 | 95.9 |

Note: Ratings at 70°F entering air temperature

4 Row Performance Data

| CHILLED WATER COOLING CAPACITY - 4 ROW | | | | | | | | | | | | | | | |
|--|----------------|-----|-----------------------|---------------------------------|--------------|---------------|---------------------------------|--------------|---------------|---------------------------------|--------------|---------------|---------------------------------|--------------|---------------|
| UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | 45°F ENTERING WATER | | | | | | 42°F ENTERING WATER | | | | | |
| | | | | 80°F DB/67°F WB ENTERING AIR | | | 75°F DB/63°F WB ENTERING AIR | | | 80°F DB/67°F WB ENTERING AIR | | | 75°F DB/63°F WB ENTERING AIR | | |
| | | | | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE |
| 3 | 280 (HIGH) | 1.0 | 1.8 | 6.7 | 6.1 | 14.8 | 5.7 | 5.4 | 11.3 | 8.1 | 6.3 | 16.2 | 6.2 | 5.5 | 12.3 |
| | | 2.0 | 6.5 | 8.9 | 7.0 | 9.9 | 7.5 | 6.1 | 7.5 | 10.8 | 7.3 | 10.8 | 8.2 | 6.4 | 8.2 |
| | | 3.0 | 13.9 | 9.8 | 7.3 | 7.2 | 8.3 | 6.4 | 5.5 | 11.8 | 7.7 | 7.9 | 9.0 | 6.7 | 6.0 |
| | 240 (MED) | 1.0 | 1.8 | 6.5 | 5.5 | 14.4 | 5.5 | 4.9 | 11.0 | 7.8 | 5.8 | 15.6 | 6.0 | 5.1 | 12.0 |
| | | 2.0 | 6.5 | 8.3 | 6.3 | 9.2 | 7.0 | 5.5 | 7.0 | 10.0 | 6.6 | 10.0 | 7.6 | 5.7 | 7.6 |
| | | 3.0 | 13.9 | 9.1 | 6.6 | 6.7 | 7.6 | 5.7 | 5.1 | 10.9 | 7.0 | 7.2 | 8.3 | 6.0 | 5.5 |
| 4 | 400 (HIGH) | 1.0 | 2.4 | 10.5 | 8.1 | 18.1 | 8.1 | 8.1 | 16.1 | 9.9 | 8.4 | 19.7 | 8.9 | 8.4 | 17.8 |
| | | 2.0 | 8.2 | 12.3 | 9.6 | 13.1 | 10.0 | 8.4 | 10.0 | 14.3 | 10.0 | 14.3 | 10.9 | 8.7 | 10.9 |
| | | 3.0 | 16.8 | 13.4 | 10.2 | 9.8 | 11.3 | 8.9 | 7.5 | 16.1 | 10.7 | 10.7 | 12.3 | 9.3 | 8.2 |
| | 320 (MED) | 1.0 | 2.4 | 9.8 | 7.1 | 17.5 | 6.7 | 6.3 | 13.4 | 9.5 | 7.4 | 19.1 | 7.3 | 6.5 | 14.6 |
| | | 2.0 | 8.2 | 11.1 | 8.3 | 11.9 | 9.1 | 7.2 | 9.1 | 12.9 | 8.7 | 12.9 | 9.9 | 7.5 | 9.9 |
| | | 3.0 | 16.8 | 12.0 | 8.8 | 8.8 | 10.0 | 7.6 | 6.7 | 14.3 | 9.2 | 9.6 | 10.9 | 7.9 | 7.3 |
| 6 | 600 (HIGH) | 2.5 | 5.6 | 17.0 | 13.2 | 13.4 | 12.8 | 11.6 | 10.2 | 18.2 | 13.7 | 14.6 | 13.9 | 12.1 | 11.1 |
| | | 3.5 | 10.2 | 18.6 | 14.1 | 11.0 | 14.7 | 12.4 | 8.4 | 21.0 | 14.8 | 12.0 | 16.1 | 12.9 | 9.2 |
| | | 4.5 | 16.0 | 19.6 | 14.7 | 9.2 | 15.8 | 12.8 | 7.0 | 22.6 | 15.4 | 10.0 | 17.3 | 13.4 | 7.7 |
| | 430 (MED) | 2.5 | 5.6 | 14.7 | 10.7 | 11.9 | 11.3 | 9.3 | 9.1 | 16.2 | 11.2 | 13.0 | 12.4 | 9.7 | 9.9 |
| | | 3.5 | 10.2 | 15.8 | 11.3 | 9.4 | 12.6 | 9.8 | 7.2 | 18.0 | 11.9 | 10.3 | 13.7 | 10.3 | 7.8 |
| | | 4.5 | 16.0 | 16.5 | 11.7 | 7.7 | 13.3 | 10.1 | 5.9 | 19.0 | 12.3 | 8.4 | 14.5 | 10.6 | 6.4 |
| 8 | 800 (HIGH) | 4.0 | 8.9 | 22.1 | 18.3 | 12.3 | 18.7 | 16.1 | 9.4 | 26.7 | 19.2 | 13.4 | 20.4 | 16.7 | 10.2 |
| | | 5.0 | 13.3 | 23.8 | 19.0 | 10.6 | 20.2 | 16.6 | 8.1 | 28.8 | 19.9 | 11.5 | 22.0 | 17.4 | 8.8 |
| | | 6.0 | 18.4 | 25.1 | 19.6 | 9.3 | 21.2 | 17.1 | 7.1 | 30.3 | 20.5 | 10.1 | 23.1 | 17.8 | 7.7 |
| | 680 (MED) | 4.0 | 8.9 | 20.7 | 16.5 | 11.4 | 17.4 | 14.4 | 8.7 | 24.8 | 17.2 | 12.4 | 19.0 | 15.0 | 9.5 |
| | | 5.0 | 13.3 | 22.0 | 17.0 | 9.7 | 18.5 | 14.8 | 7.4 | 26.4 | 17.9 | 10.6 | 20.2 | 15.5 | 8.1 |
| | | 6.0 | 18.4 | 22.9 | 17.4 | 8.4 | 19.3 | 15.2 | 6.4 | 27.6 | 18.3 | 9.2 | 21.1 | 15.8 | 7.0 |
| 10 | 1000 (HIGH) | 5.5 | 5.9 | 29.7 | 23.8 | 11.1 | 23.4 | 20.9 | 8.5 | 33.3 | 24.8 | 12.1 | 15.5 | 21.7 | 9.3 |
| | | 7.5 | 10.2 | 31.0 | 25.0 | 9.0 | 25.9 | 21.9 | 6.9 | 37.0 | 26.2 | 9.9 | 28.2 | 22.9 | 7.5 |
| | | 9.5 | 15.4 | 32.1 | 25.8 | 7.6 | 27.4 | 22.5 | 5.8 | 39.1 | 27.0 | 8.2 | 29.9 | 23.5 | 6.3 |
| | 880 (MED) | 5.5 | 5.9 | 27.6 | 21.6 | 10.4 | 21.7 | 18.9 | 7.9 | 31.0 | 22.6 | 11.3 | 23.7 | 19.7 | 8.6 |
| | | 7.5 | 10.2 | 28.8 | 22.7 | 8.4 | 24.0 | 19.8 | 6.4 | 34.3 | 23.8 | 9.1 | 26.2 | 20.7 | 7.0 |
| | | 9.5 | 15.4 | 29.7 | 23.4 | 7.0 | 25.4 | 20.4 | 5.3 | 36.2 | 24.6 | 7.6 | 27.7 | 21.3 | 5.8 |
| 12 | 1200 (HIGH) | 7.5 | 10.7 | 34.8 | 29.4 | 10.4 | 29.9 | 25.8 | 8.0 | 42.6 | 30.8 | 11.4 | 32.6 | 26.9 | 8.7 |
| | | 8.5 | 13.7 | 36.3 | 29.9 | 9.5 | 30.9 | 26.2 | 7.3 | 44.1 | 31.3 | 10.4 | 33.7 | 27.3 | 7.9 |
| | | 9.5 | 17.0 | 37.6 | 30.4 | 8.8 | 31.8 | 26.6 | 6.7 | 45.4 | 31.8 | 9.6 | 34.7 | 27.7 | 7.3 |
| | 1030 (MED) | 7.5 | 10.7 | 35.8 | 26.2 | 9.5 | 27.4 | 22.9 | 7.3 | 39.0 | 27.4 | 10.4 | 29.8 | 23.9 | 7.9 |
| | | 8.5 | 13.7 | 37.0 | 26.7 | 8.7 | 28.3 | 23.3 | 6.7 | 40.3 | 27.9 | 9.5 | 30.8 | 24.3 | 7.2 |
| | | 9.5 | 17.0 | 38.0 | 27.0 | 8.0 | 29.0 | 23.6 | 6.1 | 41.4 | 28.4 | 8.7 | 31.7 | 24.6 | 6.7 |

| HOT WATER HEATING CAPACITY - 4 ROW | | | | | | | | | | | | | |
|------------------------------------|---------------|-----|--------------------|--|-------|-------|---------------------------|----------------|------|--------------------|--|-------|-------|
| UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE | | | UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE | | |
| | | | | 140°F | 160°F | 180°F | | | | | 140°F | 160°F | 180°F |
| 3 | 280 (HIGH) | 1.5 | 3.8 | 15.8 | 20.3 | 24.8 | 8 | 800 (HIGH) | 3.0 | 5.4 | 41.5 | 53.3 | 65.2 |
| | | 2.5 | 9.9 | 16.7 | 21.5 | 26.3 | | | 4.5 | 11.0 | 44.2 | 56.8 | 69.4 |
| | | 3.5 | 18.5 | 17.2 | 22.1 | 27.0 | | | 6.0 | 18.4 | 45.6 | 58.6 | 71.7 |
| | 240 (MED) | 1.5 | 3.8 | 14.2 | 18.2 | 22.3 | | 680 (MED) | 3.0 | 5.4 | 37.3 | 47.9 | 48.6 |
| | | 2.5 | 9.9 | 14.9 | 19.1 | 23.4 | | | 4.5 | 11.0 | 39.4 | 50.7 | 61.9 |
| | | 3.5 | 18.5 | 15.2 | 19.6 | 24.0 | | | 6.0 | 18.4 | 40.6 | 52.2 | 63.7 |
| 4 | 400 (HIGH) | 1.0 | 2.4 | 19.9 | 25.6 | 31.3 | 10 | 1000 (HIGH) | 6.0 | 6.9 | 58.6 | 75.3 | 92.0 |
| | | 2.0 | 8.2 | 22.8 | 29.3 | 35.8 | | | 8.0 | 11.4 | 60.7 | 78.0 | 95.3 |
| | | 3.0 | 16.8 | 23.9 | 30.7 | 37.6 | | | 10.0 | 16.9 | 62.0 | 79.8 | 97.4 |
| | 320 (MED) | 1.0 | 2.4 | 17.4 | 22.4 | 27.4 | | 880 (MED) | 6.0 | 6.9 | 53.5 | 68.8 | 84.1 |
| | | 2.0 | 8.2 | 19.5 | 25.0 | 30.6 | | | 8.0 | 11.4 | 55.3 | 71.1 | 86.9 |
| | | 3.0 | 16.8 | 20.2 | 26.0 | 31.8 | | | 10.0 | 16.9 | 56.4 | 72.5 | 88.6 |
| 6 | 600 (HIGH) | 2.5 | 5.6 | 31.7 | 40.7 | 49.8 | 12 | 1200 (HIGH) | 6.0 | 7.0 | 68.7 | 88.3 | 108.0 |
| | | 3.5 | 10.2 | 33.4 | 43.0 | 52.5 | | | 8.0 | 12.2 | 71.4 | 91.8 | 112.2 |
| | | 4.5 | 16.0 | 34.4 | 44.2 | 54.0 | | | 10.0 | 18.7 | 73.1 | 94.0 | 114.9 |
| | 430 (MED) | 2.5 | 5.6 | 25.3 | 32.5 | 39.8 | | 1030 (MED) | 6.0 | 7.0 | 61.8 | 79.5 | 97.2 |
| | | 3.5 | 10.2 | 26.3 | 33.8 | 41.4 | | | 8.0 | 12.2 | 64.0 | 82.3 | 100.3 |
| | | 4.5 | 16.0 | 26.9 | 34.6 | 42.3 | | | 10.0 | 18.7 | 65.4 | 84.1 | 102.8 |

Note: Ratings at 70°F entering air temperature

1 Row Performance Data

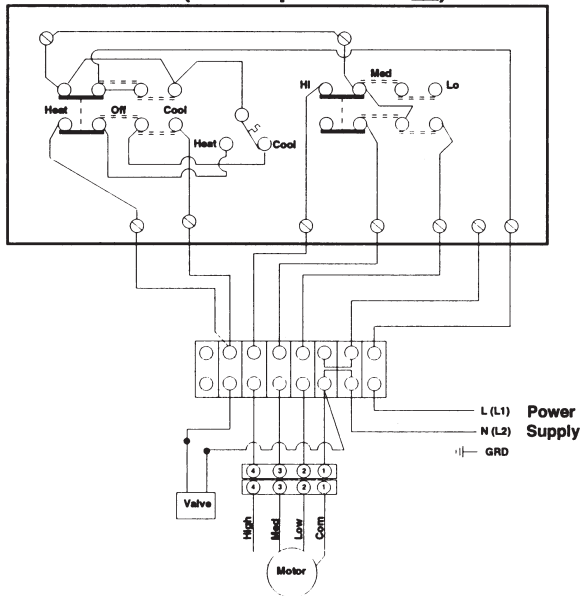
| HOT WATER HEATING CAPACITY - 1 ROW | | | | | | | | | | | | | |
|------------------------------------|---------------|------|-----------------------|---|-------|-------|---------------------------------|----------------|-----|-----------------------|---|-------|-------|
| UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE | | | UNIT SIZE (ALL MODELS) | CFM | GPM | P.D. (FT. WTR.) | HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE | | |
| | | | | 140°F | 160°F | 180°F | | | | | 140°F | 160°F | 180°F |
| | | | | | | | | | | | | | |
| 3 | 280 (HIGH) | 1.0 | 3.4 | 8.2 | 10.6 | 12.9 | 8 | 800 (HIGH) | 1.0 | 5.7 | 17.6 | 22.7 | 27.7 |
| | | 1.75 | 9.3 | 8.9 | 11.4 | 13.9 | | | 1.5 | 11.6 | 19.8 | 25.4 | 31.1 |
| | | 2.5 | 17.7 | 9.0 | 11.6 | 14.2 | | | 2.0 | 19.2 | 21.1 | 27.1 | 33.1 |
| | 240 (MED) | 1.0 | 3.4 | 7.6 | 9.8 | 12.0 | | 680 (MED) | 1.0 | 5.7 | 16.6 | 21.4 | 26.2 |
| | | 1.75 | 9.3 | 8.1 | 10.4 | 12.8 | | | 1.5 | 11.6 | 18.5 | 23.8 | 29.1 |
| | | 2.5 | 17.7 | 8.3 | 10.7 | 13.1 | | | 2.0 | 19.2 | 19.6 | 25.2 | 30.8 |
| 4 | 400 (HIGH) | 1.0 | 4.4 | 11.2 | 14.4 | 17.6 | 10 | 1000 (HIGH) | 2.5 | 7.3 | 21.9 | 28.2 | 34.4 |
| | | 1.75 | 11.7 | 12.3 | 15.8 | 19.3 | | | 3.5 | 12.9 | 23.2 | 29.8 | 36.4 |
| | | 2.5 | 21.9 | 12.7 | 16.3 | 20.0 | | | 4.5 | 19.7 | 23.7 | 30.5 | 37.3 |
| | 320 (MED) | 1.0 | 4.4 | 10.1 | 13.0 | 15.9 | | 880 (MED) | 2.5 | 7.3 | 20.6 | 26.5 | 32.4 |
| | | 1.75 | 11.7 | 10.9 | 14.1 | 17.2 | | | 3.5 | 12.9 | 21.8 | 28.0 | 34.2 |
| | | 2.5 | 21.9 | 11.3 | 14.5 | 17.7 | | | 4.5 | 19.7 | 22.4 | 28.8 | 35.2 |
| 6 | 600 (HIGH) | 1.0 | 5.0 | 14.6 | 18.8 | 23.0 | 12 | 1200 (HIGH) | 2.5 | 7.7 | 25.8 | 33.1 | 40.5 |
| | | 1.75 | 13.3 | 16.6 | 21.4 | 26.2 | | | 3.5 | 13.9 | 27.5 | 35.4 | 43.2 |
| | | 2.5 | 24.9 | 17.4 | 22.4 | 27.4 | | | 4.5 | 21.8 | 28.4 | 36.5 | 44.7 |
| | 430 (MED) | 1.0 | 5.0 | 12.8 | 16.5 | 20.1 | | 1030 (MED) | 2.5 | 7.7 | 24.1 | 31.0 | 37.9 |
| | | 1.75 | 13.3 | 14.1 | 18.2 | 22.2 | | | 3.5 | 13.9 | 25.6 | 32.9 | 40.4 |
| | | 2.5 | 24.9 | 14.7 | 18.9 | 23.1 | | | 4.5 | 21.8 | 26.4 | 33.9 | 41.4 |

NOTE: Ratings at 70°F entering air temperature

In keeping with its policy of continuous progress and product improvement, First Operations reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at www.firstco.com.

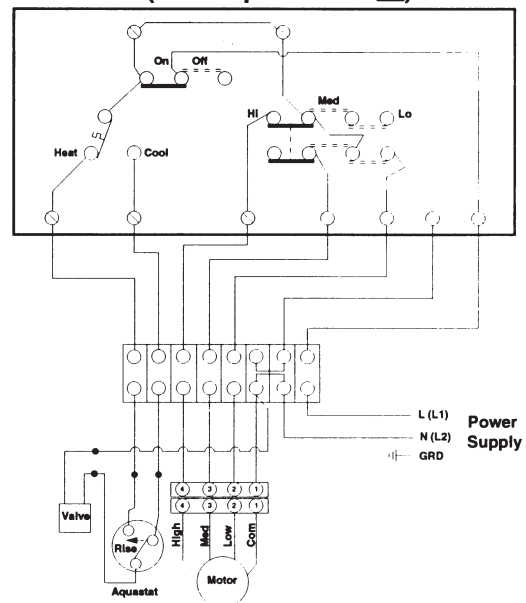
Typical Connection Diagrams

**2-Pipe Heat / Cool
Manual Changeover - Continuous Fan
(T/stat option No. A__)**

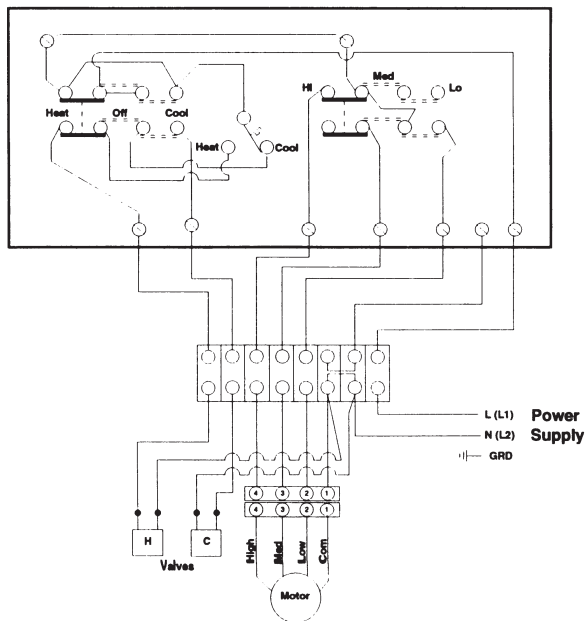


* No aquastat lockout

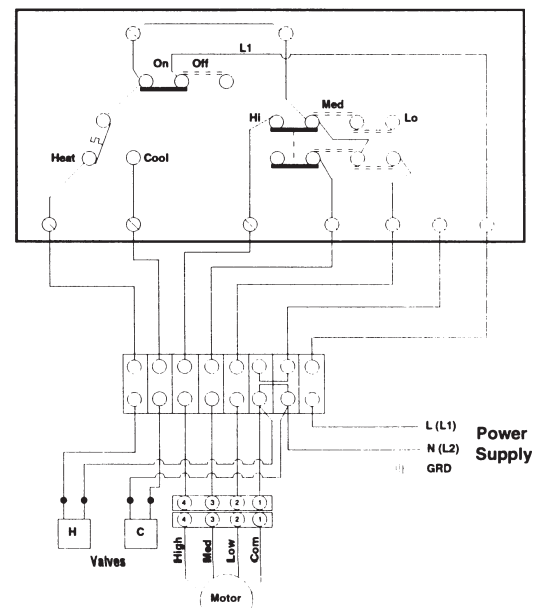
**2-Pipe Heat / Cool
Auto Changeover - Continuous Fan
(T/stat option No. B__)**



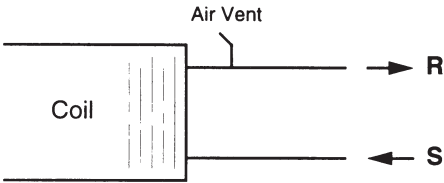
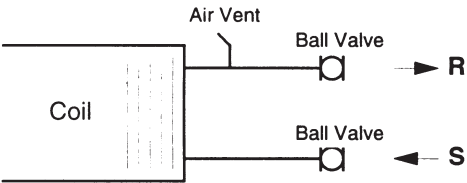
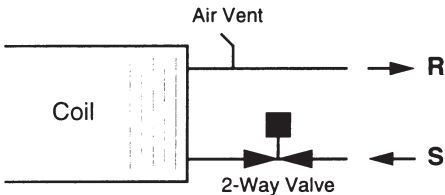
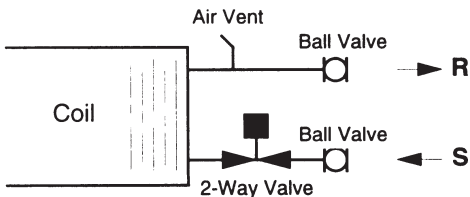
**4-Pipe Heat / Cool
Manual Changeover - Continuous Fan
(T/stat option No. M__)**



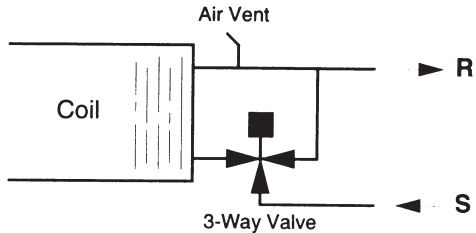
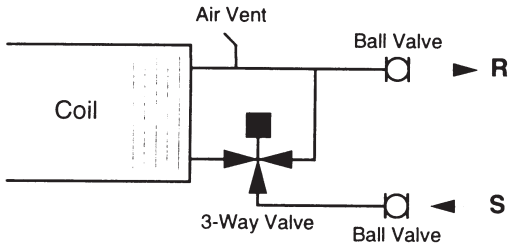
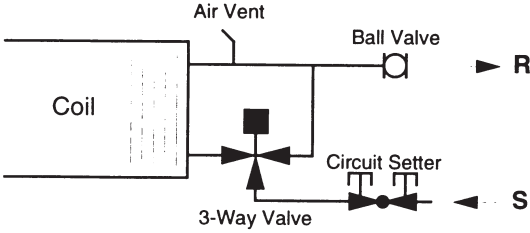
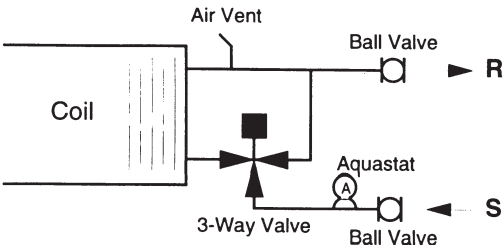
**4-Pipe Heat / Cool
Auto Changeover - Continuous Fan
(T/stat option No. N__)**



Valve / Piping Packages

| Configuration | Valve Package Code | Basic Application |
|--|--------------------|---|
| Standard Coil - No Valves  | - NV - | 2 pipe or 4 pipe: For field added valve packages |
| Ball Valves Only  | - BV - | 2 pipe or 4 pipe: Coil with ball valves for field added valve packages |
| 2-Way Valve Only  | - 2 - | 2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling |
| 2-Way Valve with Ball Valves  | - 2B - | 2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling |

Valve / Piping Packages (con't)

| Configuration | Valve Package Code | Basic Application |
|--|--------------------|---|
| 3-Way Valve Only  | - 3 - | 2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling |
| 3-Way Valve with Ball Valves  | - 3B - | 2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling |
| 3-Way Valve with Ball Valve & Circuit Setter  | - 3C - | 2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling |
| 3-Way Valve with Ball Valves & Aquastat  | - 3D - | 2 pipe: - 2 pipe Hydronic Heating & Cooling manual changeover - 2 pipe Hydronic Heating & Cooling Automatic changeover |

Model Number Nomenclature

12 VC B 0 - 126 - 31 R - 2B - N1

CFM (100'S)

3,4,6,8,10,12

Unit Style

VCB - Concealed
VSB - Cabinet slope top
VFB - Cabinet flat top
WCB - Recessed wall

Vintage

Electric Heat (KW)

Unit Voltage

126 - 120V-1PH-60Hz
246 - 208/240V-1PH-60Hz
225 - 220V-1PH-50Hz

Control Options(see below)

NC = No Controls

Valve Package

See page 6 & 7

Coil Connection

R - Right Hand
L - Left Hand

Coil Type

3 - 3 row
4 - 4 row
31 - 3 row cool, 1 row heat
41 - 4 row cool, 1 row heat

CONTROL OPTIONS FOR ELECTRIC VALVE PACKAGES

2 Pipe - Valve Cycle

| SYSTEM | THERMOSTAT CONTROLS | CONTROL VALVE TYPE | CHANGEOVER CONTROL and LOCATION | THERMOSTAT ORDER OPTION |
|---------------------|---|---|--|---|
| Heating and Cooling | Heat-Off-Cool Constant Fan Hi-Med-Low | Motorized 2-way or 3-way. Normally closed. | Manual Hot - Cool Switch on Thermostat | A1 - Unit Mount A2 - Wall Mount A3 - Unit Tamperproof |
| | On-Off Constant Fan Hi-Med-Low | Motorized 3-way Normally closed. | Automatic (1) Aquastat - Factory Mounted on Supply Line | B1 - Unit Mount B2 - Wall Mount B3 - Unit Tamperproof |
| | | Motorized 2-way or 3-way Normally closed. | Manual Summer-Winter Switch (switch must be field supplied) | C1 - Unit Mount C2 - Wall Mount C3 - Unit Tamperproof |
| Cooling Only | On-Off Constant Fan Hi-Med-Low | Motorized 2-way or 3-way. Normally closed. | None | D1 - Unit Mount D2 - Wall Mount D3 - Unit Tamperproof |
| Heating Only | On-Off Constant Fan Hi-Med-Low | Motorized 2-way or 3-way. Normally closed. | None | E1 - Unit Mount E2 - Wall Mount E3 - Unit Tamperproof |

4 Pipe - Valve Cycle

| SYSTEM | THERMOSTAT CONTROLS | CONTROL VALVE TYPE | CHANGEOVER CONTROL and LOCATION | THERMOSTAT ORDER OPTION |
|---------------------|---|---|---|---|
| Heating and Cooling | Heat-Off-Cool Constant Fan Hi-Med-Low | Motorized 2-way or 3-way. Normally closed. | Manual Hot - Cool Switch on Thermostat | M1 - Unit Mount M2 - Wall Mount M3 - Unit Tamperproof |
| | On-Off Constant Fan Hi-Med-Low | Motorized 2-way or 3-way. Normally closed. | Automatic 4 deg. Neutral Dead Band for sequenced heating & cooling, DPDT | N1 - Unit Mount N2 - Wall Mount N3 - Unit Tamperproof |

3-SPEED FAN SWITCH ONLY (no thermostat)

L1 - Unit Mount
L2 - Wall Mount
L3 - Unit Tamperproof

NOTE: 1. B1 option includes factory installed aquastat

Catalog No. VCBG1106 (Replaces VCBG803)